

Notice of Allowability

Application No.

10/693,564

Examiner

Phu Vu

Applicant(s)

KATOH ET AL.

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/12/06.
2. ☒ The allowed claim(s) is/are 1-24.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments, see Pre-Appeal Brief, filed 4/12/06, with respect to claims 1-2, 4-6, and 8-15 have been fully considered and are persuasive. The rejection of claims 1-2, 4-6, and 8-15 has been withdrawn. Reasons for allowance indicated below.

Allowable Subject Matter

Claims 1-24 are allowed. (Note claims 15-23 have been rejoined as linking claims (1, 3, and 4) have been found allowable.

The following is an examiner's statement of reasons for allowance:

Regarding claims 1-2, 4-5, 6, 8-12, 14-18, 20- 21, and 23, Okumarua teaches all the limitations of claims 1, and 4 (all other claims are dependent) except the shift ration between the first and second optical shifting sections to be 2 to 1 or 1 to 2. This is a product of the widths of the birefringent crystals. Okumura teaches specific shift magnitudes can be adjusted by varying the widths of the birefringent crystals, however omits any such relationship that would anticipate or render obvious, a shift ratio of 1 to 2 or 2 to 1.

Regarding claims 3-5, 7-8, 10, 13-15, 19-20, 22-24 (note this overlaps claims listed above), Okumura teaches all the limitations of claims 3-4 (all other claims are dependent) except an optical shifter comprising first and second optical shifting sections, each of the first and second sections comprising a first and second liquid crystal cell that selectively changes the polarization direction of the incoming light ray in

response to the voltage applied thereto; and a birefringent element, which receives the light ray that has been transmitted through the liquid crystal element and which exhibits one of multiple different refractive indices according to the polarization direction of the light ray. Claims 7 and 24 depend from claim 3.

Okamura as cited above teaches an optical shifting with only a single liquid crystal cell that changes the polarization state of the incoming light ray in response to a voltage and birefringent element. The second liquid crystal panel in each shifting section prevents a transitional state from occurring when two liquid crystal panels are switched at the same time thereby diminishing display quality due to a difference in switching speeds between the panels.

Other prior art (not Okamura) has taught multiple liquid crystal cells to improve color balance, provide additional compensation, and provide shuttering effects however neither of these teaches apply to liquid crystal panels when used as only polarization switch and if applied would be applied to the image producing LCD in the device not the LCD's found in the optical shifter.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu Vu whose telephone number is (571)-272-1562.

The examiner can normally be reached on 8AM-5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phu Vu
Examiner
AU 2871


ANDREW SCHECHTER
PRIMARY EXAMINER